REMARKS

The amendment to the specification is made solely to insert the Sequence Listing and SEQ ID NOS. into the specification. No new matter is introduced. The accompanying declaration by the inventor confirms that the sequences in the Sequence Listing are the same as those incorporated by reference into the original specification by providing the GenBank® Accession Number for each sequence. A signed declaration will be filed under separate cover.

Applicant requests that claims 17-49 be examined together without restriction. Each of SEQ ID NOs:6, 7, and 8 relate to the human thymidylate synthetase gene. SEQ ID NO:6 corresponds to the coding region. SEQ ID NO:7 correponds to the promoter region. SEQ ID NO:9 corresponds to the exons. Three SEQ ID NOs are required even though only one gene is referenced because the original specification identified the sequences by providing three GenBank® Accession Numbers.

Each of the nucleotides specified in the claims represents a single nulceotide polymorphism in the human thymidylate synthetase gene.

Attached is a marked-up version of the changes being made by the current amendment.

Please apply any other charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

Date: 24 Sept 2001

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Version with markings to show changes made

In the specification:

The paragraph beginning at page 1, line 8, has been amended as follows:

This application is a divisional of U.S. Application Serial No. 09/658,659, filed September 8, 2000, which is a CIP of Stanton, U.S. Application serial No. 09/596,033, filed June 15, 2000 entitled GENE SEQUENCE VARIACNES IN GENES RELATED TO FOLATE METABOLISM HAVING UTILITY IN DETERMINING THE TREATMENT OF DISEASE which is a CIP of Stanton, U.S. Application 09/357,743, filed July 20, 1999, entitled GENE SEQUENCE VARIACNES IN GENES RELATED TO FOLATE METABOLISM HAVING UTILITY IN DETERMINING THE TREATMENT OF DISEASE which is a CIP of Stanton, U.S. Application Serial No. 09/357,024, filed July 19, 1999, entitled GENE SEQUENCE VARIACNES IN GENES RELATED TO FOLATE METABOLISM HAVING UTILITY IN DETERMINING THE TREATMENT OF DISEASE, which claims the benefit of Stanton, U.S. Provisional Application 60/093,484, filed July 20, 1998, entitled GENE SEQUENCE VARIACNES IN GENES RELATED TO FOLATE METABOLISM HAVING UTILITY IN DETERMINING THE TREATMENT OF DISEASE, which are all hereby incorporated by reference in their entireties including drawings and tables.

Table 10 beginning at page 171 has been amended as follows:

Table 10

Variance Table

Hugo	GID	OMIM ID	VGX Symbol	Description	Variance Start	Variance	
U73338	U73338	156570	GEN-69	Methionine Synthase (SEQ ID NO:1)			
					194	(-201)C>G	5'
					284	(-111)C>T	5'
					1136	742G>A	V248M
					1252	858C>T	Silent

	1334	940G>A	D314N	
	1699	1305T>C	Silent	
	3150	2756A>G	D919G	
	3207	2813G>T	S938I	
	3209	2815G>C	G939R	
	5444	5050C>A	3'	
	5551	5157G>A	3'	
	5573	5179C>T	3'	
	5659	5265T>C	3'	
	5678	5284T>C	3'	
	5874	5480C>T	3'	
	5934	5540A>G	3'	
D78586	D78586	114010	GEN-BR	CAD PROTEIN (SEQ ID NO:2)
	3434	3408C>T	Silent	
	4313	4287T>C	Silent	
	4799	4773A>G	Silent	
	5255	5229C>T	Silent	
	5455	5429G>A	R1810Q	
	5507	5481T>C	Silent	
	5810	5784C>T	Silent	
	6128	6102C>T	Silent	
	6626	6600C>T	Silent	
	6686	6660C>T	Silent	
U09178	U09178	274270	GEN-HA	Dihydropyrimidine Dehydrogenase (SEQ ID NO:3)
	166	85T>C	C29R	
	577	496A>G	M166V	
	638	557A>G	Y186C	
	1708	1627A>G	I543V	
	3432	3351T>C	3'	
	3682	3601C>T	3'	
	3730	3649G>A	3'	
	3925	3844A>G	3'	
	3937	3856T>C	3'	
U19720	U19720	600424	GEN-I1	Folate Transporter (SLC19A1) (SEQ ID NO:4)
	175	80G>A	R27H	
	341	246C>G	Silent	
	791	696C>T	Silent	
	1067	972G>A	Silent	
	1337	1242C>A	Silent	
	1997	1902T>C	3'	
	2100	2005^2006insG	3'	
	2582	2487T>G	3'	

2617 2522C>T 3'
2652 2557T>C 3'

U92868 U92868 600424 GEN-LUK Homo sapiens reduced folate carrier (RFC1) gene, exons 1a, 1c and 1b (SEQ ID NO:5)

431 431A>G Intron
441 441A>G Intron
498 498C>T Intron
579 579G>C Intron
599 599G>C Intron

X02308 X02308 188350 GEN-KL Thymidylate synthetase (SEQ ID NO:6)

1066 961T>C 3'
1136 1031A>G 3'
1497 1392T>A 3'

D00517 D00517 188350 GEN-LUC Thymidylate synthase, promoter (SEQ ID NO:7)

276 276C>T Intron
321 321T>C Intron
452 452G>A Intron
457 457^insC Intron
491 491C>A Intron
533 533T>C Intron
624 624A>C Intron
639 639A>G Intron
655 655T>C Intron

D00596 D00596 188350 GEN-LUD Homo sapiens gene for thymidylate synthase, exons 1, 2, 3, 4, 5, 6, 7, complete cds (SEQ ID NO:8)

701 701A>C Intron
716 716A>G Intron
732 732T>C Intron
1293 1293A>G Intron
1322 1322C>G Intron
1379 1379T>C Intron
1590 1590C>T Intron
1688 1688C>G Intron
2401 2401A>G Intron
2429 2429G>A Intron
2488 2488C>T Intron
2594 2594G>T Intron
2618 2618G>A Intron
3083 3083G>A Intron
3125 3125G>A Intron
3212 3212C>T Intron
3619 3619T>A Intron

	3635	3635G>A	Intron
	4256	4256G>A	Intron
	4898	4898A>G	Intron
	5006	5006C>T	Intron
	5062	5062G>A	Intron
	5167	5167G>A	Intron
	11069	11069A>G	Intron
	11238	11238C>T	Intron
	11293	11293T>G	Intron
	11422	11422T>C	Intron
	11686	11686C>T	Intron
	12598	12598T>C	Intron
	13171	13171T>C	Intron
	13298	13298G>A	Intron
	13645	13645T>C	Intron
	13751	13751C>A	Intron
	13782	13782T>C	Intron
	13806	13806T>C	Intron
	13813	13813T>C	Intron
	14479	14479A>G	Intron
	14546	14546^insT	Intron
	14585	14585C>T	Intron
	14729	14729G>A	Intron
	14787	14787C>T	Intron
	14795	14795G>A	Intron
	15041	15041T>C	Intron
	15343	15343G>A	Intron
	15449	15449G>A	Intron
	15502	15502G>A	Intron
	15545	15545C>T	Intron
	15589	15589A>G	Intron
	15769	15769C>T	3'
	15839	15839A>G	3'
	16148	16148G>A	3'
	16198	16198T>G	3'
	16202	16202G>T	Intron
X59618	X59618	180390	GEN-M3

Ribonucleotide reductase M2 polypeptide (SEQ ID NO:9)

128	(-67)G>A	5'
189	(-6)T>G	5'
524	330C>G	Silent
1399	1205T>A	3'
1464	1270G>A	3'
1636	1442C>T	3'
1738	1544C>T	3'

	2259	2065T>C		3'
S72487	S72487	131222	GEN-3LD	Thymidine phosphorylase, partial (SEQ ID NO:10)
	183	19G>A		D7N
	483	319C>T		3'
	601	437G>C		3'
	1299	1135G>A		3'
M58602	M58602	131222	GEN-LUB	Thymidine phosphorylase, promoter and genomic (SEQ ID NO:11)
	124	124C>T		3'
	439	439G>A		3'
	1044	1044^insCT		3'
	1331	1331G>A		3'
	1977	1977G>A		Intron
	2149	2149G>A		Intron
	2467	2467A>G		Intron
	2634	2634C>G		Intron
	2975	2975G>A		Intron
	3116	3116G>T		Intron
	3255	3255A>C		Intron
	3344	3344T>C		Intron
	4051	4051C>A		Intron
	4782	4782G>A		Intron
	5022	5022T>C		Intron
	5266	5266G>A		Intron
	5285	5285C>G		Intron
	5438	5438T>A		Intron
	5482	5482C>T		Intron
	5629	5629G>A		Intron
	5648	5648C>T		Intron
	5731	5731G>A		Intron
M98045	M98045	136510	GEN-4C3	Homo sapiens folylpolyglutamate synthetase mRNA, complete cds (SEQ ID NO:12)
	802	732C>T		Silent
	1747	1677G>T		3'
	1900	1830T>C		3'
U24253	U24253	136510	GEN-LUE	Human folylpolyglutamate synthetase (FPGS) gene, exons 5-11, and partial cds (SEQ ID NO:13)
	1424	1424C>A		Intron
	1649	1649G>A		Intron
	2554	2554A>G		Intron
U24252	U24252	136510	GEN-LUF	Folylpolyglutamate synthetase, promoter and exons 1-4 (SEQ ID NO:14)

263	263A>G	Intron
266	266G>T	Intron
527	527C>G	Intron
1037	1037A>G	5'
1139	1139G>A	Intron
1217	1217C>T	Intron
1647	1647C>T	Intron
1955	1955G>A	Intron
2017	2017G>A	Intron
2037	2037G>A	Intron
2189	2189A>G	Intron
2282	2282C>T	Intron
2309	2309A>G	Intron

U09806 U09806 236250 GEN-4FZ Human methylenetetrahydrofolate reductase mRNA, partial cds (SEQ ID NO:15)

120	120T>C	Silent
464	464T>G	M155R
519	519C>T	Silent
668	668C>T	A223V
1059	1059T>C	Silent
1289	1289C>A	3'
1308	1308T>C	3'
1784	1784G>A	3'

AF061655 AF061655 123920 GEN-LUJ Cytidine deaminase, promoter (SEQ ID NO:16)

575	575T>C	Intron
648	648T>C	Intron
771	771G>C	Intron
883	883G>A	Intron
941	941^insC	5'
1051	1051A>C	K27Q